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OBJECTS OF THE SOCIETY

# A PUBLIC ZOOLOGICAL PARK THE PRESERVATION OF OUR NATIVE ANIMALS THE PROMOTION OF ZOOLOGY

### 1910



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#### **REPORT OF THE**

## VETERINARIAN AND PATHOLOGIST

#### W. REID BLAIR, D.V.S.

W HILE fortunate during the past year, in that no epidemic of infectious or contagious disease has occurred among our animals, we have, however, lost a number of valuable specimens from rather unusual disorders. Among these were the young African rhinoceros; the male Bengal tiger; a Rocky Mountain goat and the kiang.

During the past year there has been the usual number of interesting medical and surgical cases: an orang-utan with a compound fracture near the head of the right femur; a musk-ox calf with an infected wound and necrosis of the spines of the sacral vertebrae and hip bone, resulting from injuries received from Eskimo dogs at the time the animal was captured by the Rainey expedition; a female African elephant with severe keratitis of the left eye, caused by injury from the tusk of the male elephant Kartoum; chimpanzee with broncho-pneumonia; caracal lynx with distemper, and a clouded leopard with pneumonia.

*Distemper.*—Distemper is a highly contagious, febrile disease, tending to spread rapidly and to produce degenerative changes in the lungs, intestines, kidneys and nervous system.

Animals Susceptible.—Wolves, foxes, coyotes, Eskimo dogs, squirrels, dingos, Cape hunting dogs, ocelots, lynxes, monkeys.

Symptoms.—In the great majority of cases observed by us, one of the earliest and most constant symptoms is conjunctival congestion—swollen eyelids and red mucosa—with weeping. Within twenty-four to forty-eight hours the watery tears become muco-perulent, matting together the lashes and eyelids. Vomiting is usually marked at the beginning of the attack. Thirst and refusal of all food, also, are prominent symptoms. Diarrhea occurs early, and the fecal discharges, at first black and pasty, soon become mixed with mucus and blood. The abdomen is tense and contracted, and weakness and prostration follow rapidly. At times the attack is so sudden and prostrat-

ing that the animal never rallies. These cases generally show marked nervous symptoms from the beginning. The animal is very restless, frequently getting up and moving about, twitching the muscles of the face and limbs, and rolling the eyes. Epileptic attacks appear in the early stages of the disease. These spasms follow each other in rapid succession. Tonic spasms, affecting the muscles of the neck, cause the head to be turned rigidly to one side; and involuntary movements of the limbs are seen when the animal is lying. In the nervous form death usually takes place on the second or third day after the first symp-The skin eruptions that occur in such a large toms are noted. proportion of cases of distemper among domestic animals, have rarely been observed by me among our wild animals. Paralysis of the hind limbs may occur early, but more frequently after the acute symptoms have subsided.

*Treatment.*—Distemper is a highly contagious disorder, and medical treatment is often very unsatisfactory. There is no specific remedy known at the present time. The method that we endeavor to follow in regard to this disease is, to closely inspect and quarantine susceptible animals when they first reach the Park, and to immediately isolate such animals upon the first suspicious symptoms of the malady. Unless the animal is valuable, it has always seemed best to destroy it at once and thoroughly disinfect the cage in which it has been confined. Owing to the large numbers of animals in zoological collections that are directly susceptible to the contagion of distemper, no precautions, however stringent, would be unjustifiable. One may feel reasonably safe from an epidemic of distemper, only so long as such measures are strictly enforced.

Such cases of valuable animals suffering with distemper, as are desirable to treat, should be handled with the utmost care to prevent the spreading of the disease.

In cases where the appetite is not entirely lacking, and in which we succeed in administering medicines, treatment is successful; recovery taking place in about two to three weeks. Eskimo dogs, foxes, Azara dog, dingo, caracal lynx, coati mundis, opossums and raccoon dogs have all been successfully treated.

The patient, of course, should be isolated from all companions; if possible in a separate building with concrete floor. It should be rendered comfortable and especially guarded against cold. This is of vital importance, as any sort of chill is apt to aggravate symptoms and set up complications. As there is great tendency to wasting and weakness, nothing can be of greater importance than that every means should be taken to feed and maintain the strength of the patient.

At the outset a laxative should be given; we have found that powdered sulphur will be readily taken when other laxatives are refused. One to two teaspoonsful in milk may be conveniently given to the larger animals, and this has a very beneficial effect; removing undigested food and other intestinal toxic matters that are the causes of the diarrhea so frequently associated with distemper. Euquinine (tasteless quinine) in doses of three to ten grains should be administered at the outset in milk.

Food, consisting of milk, raw eggs and brandy, should be given as often as the animal will partake of it. If the diarrhea is troublesome, subnitrate of bismuth in the whites of eggs, or Xeroform in five-grain doses is an exceedingly valuable intestinal antiseptic.

During 1909, and particularly 1910, considerable work was carried on with distemper, especially in protective inoculation with vaccines. No cases of distemper have occurred in foxes that were treated with vaccine and afterward exposed to infection. In the animals treated with the distemper vaccines, good results have been obtained. All these cases have been greatly benefited after the second injection and have made quicker recoveries than with any other treatment. Further work along this line is now being carried out.

The walls and floors of cages in which distemper cases have been confined should be washed and scrubbed in the ordinary way and afterward washed with a strong solution of creolin, or other equally reliable disinfectant. All feeding and drinking vessels that have been near distemper patients must be equally well disinfected. Animals should not be allowed to mingle with others, however well they may seem, so long as they show any discharge from the nostrils or eyes. Animals that have recovered should not be again exhibited with others, until at least ten weeks have elapsed.

*Rheumatism.*—This is quite a common affection among wild animals in close confinement. Treatment of this disorder has been most successful in the following animals: baboon, elephant, Altai wapiti, Baker roan antelope, rhinoceros, lion, tiger and bear.

Rheumatism is a constitutional, inflammatory affection; probably toxic; tending to localization in the joints, muscles and tendons, with a marked tendency to shift from place to place.

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The association of rheumatism with cold and dampness has always been so notorious that no argument is needed to emphasize that fact. It is pre-eminently a disease of cold climates, and especially along the Atlantic slope. Animals that are kept in cold, damp, sunless buildings, suffer most. A sudden change of weather, to cold and wet, is the signal for aggravation of the existing disease. While cold and dampness are potent factors in precipitating or aggravating an attack, these must not be looked upon as the sole or essential causes of rheumatism. The numerous theories, such as the excess of lactic acid, neuropathic, infective, etc., each have their staunch supporters.

Symptoms.—The attack is usually sudden and marked by a slight chill, shivering and lameness. Of the joints affected, the knee is most frequently attacked; the hock and ankles next in order. The tendons and their synovial sheaths are very often implicated. A joint that is weak by reason of previous injury or disease is especially liable to suffer. The affected joint is usually swollen, hot and tender; the sensitiveness being as a rule greatest when there is pressure upon the capsular ligament. In some cases, however, the swelling may be entirely absent, and the trouble is then located only by the evidence of pain during motion.

In one case of a Baker roan antelope, the left knee has frequently been the site of rheumatic attacks. This animal would walk on three legs, or upon four with great stiffness, avoiding as far as possible all flexion of the joint. The joint was always much swollen. During these attacks the animal would lie most of the time, but, if compelled to walk, his sufferings was shown by hastened breathing and dilated nostrils.

In the case of an African rhinoceros, the knees and hocks were simultaneously attacked, and the suffering of the animal was intense. The animal would lie on its side with all four legs extended, and when any attempt was made to disturb him he would groan with pain, and could only gain his feet with great effort. All the joints were very painful on pressure and much swollen; the skin was dry and hard; the mucous membrane of the nose and mouth congested, and the eyes very much injected. When made to move he would do so with very great difficulty, slowly and stiffly, grunting or groaning at each movement.

*Treatment.*—To place an animal suffering from rheumatism in warm, dry, quarters, is the first important step to take. Carnivorous animals have been greatly benefited by the following: ļ

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Sodium salicylate, half oz., water six oz., the dose for any animal up to fifty pounds weight being one or two teaspoonsful. This mixture should be given every two or three hours in a few ounces of milk, until improvement is observed; then at longer intervals to complete recovery. Exposure to cold should be carefully guarded against during the convalescent stage, as there is great tendency to relapse. An animal with rheumatic tendencies should not be allowed to lie on concrete floors.

In the case of the young African rhinoceros, salol in one dram doses was tried for about a week, but without any marked benefit. This was then discontinued and salicylate of sodium substituted with the result that the animal showed almost immediate relief. This continued for three weeks when entire recovery had taken place. While this was a very striking case, still, we have had equally good results in the treatment of rheumatism in other animals by the administration of this drug.

It appears that the secret of success with salicylate compounds, lies in the speedy saturation of the system with the drug, rather than its moderate and continuous administration. It is not desirable, however, to continue this indefinitely, but when immediate relief has been secured to give the agent but twice a day. If the salicylate of sodium fails to relieve, when well administered for two or three days, there is reason to believe that the case is not one of genuine rheumatism. In such cases a combination of quinine and potassium internally might be employed with some hope of success.

In acute joint rheumatism, anodynes are often applied to the affected parts with good results. In such cases lead and opium lotion applied freely to the joints and the parts covered with cotton and bandaged, will be found to afford much relief. If the pain is excessive, repeated doses of Dover's powder will be found useful in allaying the pain. In the less violent cases camphorated oil, soap liniment, or a combination of essential oils, as turpentine or peppermint with aqua ammonia and linseed oil or sweet oil, may secure much relief. The local application of anti-rheumatic agents would embrace all the salicylates, oil of wintergreen and peppermint.

A course of tonics is often the best resort in chronic rheumatism. While Fowler's solution and tincture of muriate of iron have been beneficial in the larger animals, iodide of iron has been helpful in other cases. The local treatment recommended for acute rheumatism is even more applicable to the chronic form. Warmth, a sunny corral or cage, and a varied nutritious and easily digested diet are important conditions.

Inflammation of the Lips and Nose in Monkeys.—This troublesome condition is quite a common affection among South American monkeys, but the animals principally affected are, sapajous, spider monkeys and marmosets.

The disease is characterized by redness, swelling, heat and tenderness of the lips, cracks, blisters and abraded surfaces surrounding the mouth and nostrils.

Causes.—These may be classed as mechanical, chemical and microbian.

The disease occurs frequently among those animals whose cages are bedded with dry, fibrous hay containing vegetable irritants, such as red and white clover, fungi or musty substances. These substances acting as temporary irritants are usually the starting point of an abrasion on the lips and surrounding skin, and the inflammation is further aggravated by attacks of bacterial ferments. The bacteria present in the mouth, food or water, would have had no effect whatever upon the healthy membrane or skin, but as soon as these surfaces become denuded of the proper protective coverings, the bacteria at once begin to make serious inroads. The affection is also the result of fermented and decomposed food, and of too hot food and liquids.

Symptoms.—The lips are first red and inflamed. In a few days they exhibit excessive moisture and later the formation of blisters and scabs, which extend to the skin around the mouth and under the jaws. The swelling may become excessive and so painful that the animal will no longer attempt to feed. In severe cases emaciation and weakness follow and the animal dies from exhaustion. If the scabs are forcibly removed, raw, bleeding surfaces are left exposed.

Treatment.—These cases should be removed to a cage without bedding, and the lips treated by painting with five per cent. alcoholic solution of blue pyoktannin, or lead and opium lotion. In mild cases, which have as yet no excessive scab formation, saturated solutions of boracic acid are useful, and if applied several time daily, will be the only treatment necessary. For susceptible animals, avoid irritating substances, such as clover hay for bedding.